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It will be noticed that in this demonstration no use has been made of the assumption that the angles of the triangle are acute. On the other hand, if an angle of the triangle is greater than 120°, it is clear that there is no point $O$ such that the lines $OA$, $OB$, $OC$ make angles of 120° with each other. The explanation of the paradox is, that it was tacitly assumed that $O$ does not coincide with a vertex, and in the case of an angle greater than 120° the point which gives the minimum actually is the vertex of the obtuse angle.

## NOTES AND NEWS.

SEND COMMUNICATIONS TO D. A. ROTHROCK, Indiana University, Bloomington, Ind.

The Royal Society recently granted the Sylvester Medal to Professor GASTON DARBOUX for his contributions to mathematical science.

Professor W. R. SMITH, of the University of Minnesota, has gone to Dallas, Texas, as teacher of mathematics in the Terrill School for Boys.

Dr. GILLIE A. LAREW, who has been on leave during the past year, has returned to her position in Randolph-Macon Woman's College as adjunct professor of mathematics.

Dr. ISAAC SHARPLESS, formerly instructor and professor of mathematics at Haverford College, and president since 1887, retires from active service at the end of the present college year.

The following appointments to instructorships in mathematics have recently been made: Mr. H. C. CLEVENGER, at the school of mines of the University of Montana; Mr. C. V. REYNOLDS, at Wesleyan University; and Mr. F. L. SMITH, at Princeton University.

Promotions have been announced as follows: Dr. W. M. SMITH, to a professorship of mathematics at Lafayette College; Assistant Professor R. M. WINGER, to a professorship at the University of Oregon; Dr. J. K. LAMOND, to a professorship at Pennsylvania College; Mr. H. W. MYERS, to a professorship at Huron College; Dr. H. W. ROEVER, to an associate professorship of mathematics and Dr. G. O. JAMES, to an associate professorship of mechanics and astronomy, at Washington University; Dr. R. L. MOORE, to an assistant professorship at the University of Pennsylvania; Dr. W. E. MILNE, to an assistant professorship at Bowdoin College; Dr. A. R. CRATHORNE, to an assistant professorship at the University of Illinois; Dr. J. J. LUCK, to an adjunct professorship of mathematics at the University of Virginia; and Dr. W. V. LOVITT and Dr. T. E. MASON, to assistant professorships at Purdue University.

Professor H. B. LEONARD, of the University of Oregon, becomes professor of mathematics at the University of Arizona, and assistant professor G. H. CRESSE has been promoted to an associate professorship of mathematics.

The tenth regular meeting of the Southwestern Section of the American Mathematical Society was held at the University of Kansas, on December 2, 1916. Eleven papers were presented by representatives from the universities of Texas, Kansas, Nebraska, Missouri and Oklahoma, and from Washington University and Rice Institute. Visiting members of the Society were entertained by the mathematics department of the University of Kansas on Friday evening at a smoker and on Saturday noon at a luncheon.

Among the scientific papers in the tenth number of Vol. 2, *Proceedings of the National Academy of Sciences* are: "Point sets and Cremona groups," by A. A. COBLE, of Johns Hopkins University; "Some problems of Diophantine approximation," by G. H. HARDY and J. E. LITTLEWOOD, of Trinity College, Cambridge and "Newton's method in general analysis," by A. A. BENNETT, of Princeton University.

"The mathematics of common things" is the subject of an interesting paper in Vol. 16, No. 7, *School Science and Mathematics,* by Miss HARRIET C. GLAZIER, of The Western College for Women, Oxford, Ohio. The writer of this paper enumerates a large number of illustrations of the fundamental notions of algebra and geometry as related to the facts of nature. Quantity, quality, conditions, functions, and geometric facts are considered in the paper.

A Mathematics Club has been organized at the University of Alabama, with D. SKOLNIK as chairman. Such clubs among the students of the colleges serve as a great stimulus to individual effort along special lines of study, and in many instances furnish a means of instructing students less advanced in mathematical knowledge. Last year the members of the Mathematical Society of the College of the City of New York volunteered a few hours each weeks for instructing freshmen who had been retarded in their mathematics. Such service is most valuable, enabling many students who otherwise drop out of college to gain normal standing. Mathematics clubs in high schools could very readily be organized to undertake similar volunteer service for those retarded in the high-school studies.

Mathematics clubs are maintained in a number of the Chicago high schools. Interesting programs are provided, and at times are made to include a union of several clubs. On November 27, a union program was given by the clubs of Bowen, Wendell Phillips, Harrison Technical, and Hyde Park high schools as follows: "The nine point circle," by J. WEISS, of Wendell Phillips; "An algebraic proof of the Pythagorean theorem," by E. A. VORISEK, of Harrison Technical; "Modern Geometry," by C. BARTLETT, of Hyde Park; and "The sum of the angles of a triangle on the sphere and pseudosphere," by C. PETERSON, of Bowen high school.

We record the death of a number of mathematicians: Professor F. PRYM, of the University of Würzburg, December 15, 1915, at the age of seventy-five years;

Professor P. DUHEM, of the University of Bordeaux, at the age of sixty-seven; Dr. WILLIAM ESSON, Savilian professor of mathematics in the University of Oxford, at the age of eighty-eight; Professor S. B. MACLAREN, of University College, Reading, who died from wounds received in battle; Dr. HENRY GUNDER, formerly professor of mathematics at Findley College, Ohio, and later at Little Rock University, Arkansas, at the age of seventy-nine years; Dr. PERCIVAL LOWELL, director of the Lowell observatory, Flagstaff, Arizona, at the age of sixty-one years; Professor A. G. SMITH, head of the department of mathematics and astronomy at the University of Iowa, at the age of forty-eight years; Dr. W. C. ESTY, professor of mathematics and astronomy at Amherst College from 1862 to 1905 and since 1905 professor emeritus of mathematics; Mr. J. C. RAYWORTH, assistant professor of mathematics at Washington University, St. Louis, at the age of forty-two; and Professor CLEVELAND ABBE, of the United States Weather Bureau, at the age of seventy-eight.

The Association of Mathematics Teachers of New Jersey held its fifth regular meeting in the Central High School, Newark, N. J., on November 25, 1916. Professor C. O. GUNTHER, of Stevens Institute of Technology, is president, and Mr. A. S. HEGEMAN, of Central High School, Newark, is secretary. This organization of the teachers of mathematics of New Jersey has conducted a number of investigations along pedagogical and administrative lines, and at the present meeting received the "Final report of the committee on trigonometry courses," by the chairman of the committee, Professor C. O. GUNTHER. Secondary mathematics was provided for on the program by two papers: "The first-year high-school course in mathematics," by Mr. A. W. BELCHER, of the East Side High School, Newark; and "Teaching first year algebra," by Mr. WILLIAM STRADER, of Dickinson High School, Jersey City. A discussion on "Newton's analytical triangle" was given by Mr. W. D. REES, of Rutgers College, and "Some theorems on regular polygons described on the sides of a triangle," by Professor C. R. MACINNES, of Princeton University.

"The zero and principle of local value used by the Maya of Central America" is the subject of an interesting historical note by Professor FLORIAN CAJORI in *Science*, Nov. 17, 1916. Attention is called to the early use of a symbol for *zero* and the principle of local value of number symbols employed by the Maya probably dating back near the beginning of the Christian era. The Maya glyphs first deciphered by FÖRSTEMANN of Dresden, 1886, and independently by GOODMAN of California, relate for the most part to the calendar, to chronology, and to astronomy. The unit of this number system was 20, for which a special symbol, a half closed eye with a dot above, was used. Separate symbols of dots and bars represented the numbers from 1 to 19, each dot representing a unit, and each bar representing five units. Professor CAJORI gives as his source of information the recent Bulletin 57 of the Bureau of American Ethnology, Smithsonian Institution, Washington, D. C. This bulletin is an elementary presentation of the principles of American archeology entitled "An introduction to the study of the Maya hieroglyphs," by S. G. MORLEY. Copies of this valuable publication may be obtained at a nominal cost from the superintendent of documents, Washington, D. C.

College-entrance mathematics receives a vigorous criticism from a writer in *School and Society,* October 21, 1916. The occasion for the article seems to have been the lowering of the passing grade for freshmen entering Harvard University under the examination in algebra conducted in June by the College Entrance Board. It seems that some 75 per cent. of the candidates fell below the passing grade of 60 per cent. in algebra, but in other subjects 75 per cent. passed. This situation the university authorities met by lowering the passing grade in algebra. The writer of the above-mentioned paper launches his discussion by saying: "Why should we longer annoy and worry our boys and girls with algebra (and geometry?) in their busy preparation for college? especially as these subjects are for the large majority as useless as they are plainly worrisome?" And again, "algebra is a time-wasteful fetish, an anachronism for the great majority of boys as well as for nearly all the girls." But what shall we have in the place of mathematics? Can we not as well say that ancient language, or the modern languages, or history, or science are *time-wasteful* for a large number of boys and girls? Few people use a foreign language after leaving school, and why do we modern mortals want to know anything of the history of the dead past? So far as college entrance examinations are concerned, these subjects may be made just as *unpassable* as algebra. It is interesting to note the recent memorandum (*School and Society,* Dec. 9, 1916) of the Teaching Committee of the Mathematical Association of Great Britain on what the pupil should acquire from a school course in mathematics. After concurring with the councils of the Classical, English, Geographical, Historical and Modern Language Associations in the view that any reorganization of the educational system should make adequate provision for both humanistic and scientific studies, should discourage premature specialization, and should insure some of the essentials of a liberal education to those preparing for the profession, the committee goes on to "submit that from a school course in mathematics the pupil should acquire: (1) an elementary knowledge of the properties of number and space; (2) a certain command of the methods by which such knowledge is reached, together with facility in applying mathematical knowledge to the problems of the laboratory and workshop; (3) valuable habits of precise thought and expression; (4) some understanding of the part played by mathematics in industry and practical arts, as an instrument of discovery in the sciences, and as a means of social organization and progress; (5) some of the appreciation of organized abstract thought as one of the highest and most fruitful forms of intellectual activity."